Spitzer: NASA's Newest Great Observatory

Michael Werner
(Email: Mike.Werner@jpl.nasa.gov)
Jet Propulsion Laboratory, Pasadena, California

The Spitzer Space Telescope, whose mission is to explore the universe at infrared wavelengths, is the fourth and final element in NASA's Great Observatory program. It was launched on August 25, 2003 into a unique Earth-trailing orbit, and has been performing flawlessly. Spitzer features a radiatively and cryogenically cooled 0.85 m telescope and three cryogenically cooled, extremely sensitive science instruments utilizing state-of-the-art infrared detector arrays. The innovative cryo-thermal system design promises a cryogenic lifetime in excess of five years, the telescope image quality exceeds the requirement of diffraction-limited performance at 6.5 μm, and the spacecraft provides sub-arcsecond pointing accuracy and stability. Spitzer has opened the infrared wavelength regime to exploration with enormous gains in sensitivity over previous missions, and has already made significant discoveries in subjects as varied as star formation and cosmology. In this talk we will give an overview of the system performance, and will discuss some of the exciting early scientific results from the mission.